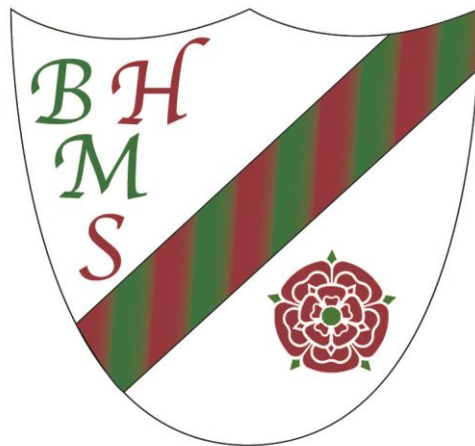


# Bedford Hall Methodist Primary School



## Science Policy

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| Written by:       | Mrs L Edwards  |
| Date agreed:      | September 2021 |
| Next Review Date: | September 2023 |
| Chairs signature: |                |

## Mission Statement

Bedford Hall Methodist Primary School strives to provide a caring environment in which every individual can achieve his or her full potential.

To achieve this, we wish to create a happy, secure and purposeful atmosphere throughout the school, which is conducive to learning and high standards, and is based on Christian values.



## **Safeguarding Statement**

At Bedford Hall Methodist Primary School, we recognise our moral and statutory responsibility to safeguard and promote the welfare of all children.

We work to provide a safe and welcoming environment where children are respected and valued. We are alert to the signs of abuse and neglect and follow our procedures to ensure that children receive effective support, protection and justice.

The procedures contained in the Safeguarding Policy apply to all staff, volunteers and governors

## **Science Policy**

This policy outlines the guiding principles by which this school will implement Science in the National Curriculum. It is reviewed periodically.

### **Our Rationale for Teaching Science**

Science is a body of knowledge built up through experimental testing of ideas. Science is also methodology, a practical way of finding reliable answers to questions we may ask about the world around us. Science in our school is about developing children's ideas and ways of working that enable them to make sense of the world in which they live through investigation, as well as using and applying processing skills. We want our children to develop a thirst for knowledge and an understanding, both of themselves and their environment. Science is all around us and it is of fundamental importance that children develop an enquiring and creative mind.

### **Aims for the teaching of Science:**

- Prepare our children for life in an increasingly scientific and technological world.
- Foster concern about, and active care for, our environment.
- Help our children acquire a growing understanding of scientific ideas.
- Help develop and extend our children's scientific concept of their world.
- Develop our children's understanding of the collaborative nature of science.
- Developing links between what children learn in the classroom and the world outside the classroom.

### **Attitudes:**

- Encourage the development of positive attitudes to science.
- Building on our children's natural curiosity and developing a scientific approach to problems.
- Encouraging open-mindedness, perseverance and responsibility.
- Building our children's self-confidence to enable them to work independently.
- Developing our children's social skills to work co-operatively with others.
- Providing our children with an enjoyable experience of science so that they will develop a deep and lasting interest and may be motivated to study science further.

### **Skills:**

- Giving our children an understanding of scientific processes.
- Helping our children to acquire practical scientific skills.
- Developing the skills of investigation - including observing, measuring, predicting, hypothesising, experimenting, communicating, interpreting, explaining and evaluating.
- Developing the use of scientific language, recording and techniques.
- Enabling our children to become effective communicators of scientific ideas, facts and data.

## **The Role of the Science Subject Leader**

- Support colleagues in their implementation of the scheme of work, assessment and record keeping activities.
- Take responsibility for the purchase and organisation of central resources.
- Take appropriate steps to keep up-to-date with developments and pass on information to colleagues as appropriate.
- Complete regular book looks and learning walks.
- Ensure new members of staff have a firm knowledge of how science is taught at our school.
- Provide regular training for staff to ensure good quality science teaching remains through the school.

## **Planning and Teaching**

Science teaching in Key Stage 1 and Key Stage 2 consists of four areas, these being:

Sc1 Scientific Enquiry

Sc2 Life and Living Processes (BIOLOGY)

Sc3 Materials and their Properties (CHEMISTRY)

Sc4 Physical Processes (PHYSICS)

Our role is to teach scientific enquiry through the contexts of the three main content areas.

For children in the Foundation Stage science is included as part of a holistic unit called Understanding the World. Topics for the Early Years children include as many elements of science as possible but as flexibility is necessary, the Foundation Stage does not require a rigid scheme.

### **Progression:**

- Use Chris Quigley Milestones to plan Science lessons (Milestone 1 – Year 1&2, Milestone 2 – Year 3&4, Milestone 3 – Year 5&6) to ensure progression across the school.
- All KS1 and KS2 classes to use ECM Knowledge Organisers at the start of each topic to ensure age-appropriate vocabulary and Scientific concepts are being taught.

### **Practical work:**

We believe that practical work is an integral part of science learning. Children may do this in a variety of ways:

- observations
- sorting and classifying
- investigations - fair test, pattern seeking etc.

### **End Points:**

When planning a unit of work, teachers to be clear about the end point for that topic. Examples of end points could be:

- An investigation, planned and carried out by the pupils.
- A presentation to showcase their knowledge of the unit.
- Create a knowledge organiser for other children.

## **Classroom Management**

Class organisation and Science teaching should include opportunities for:

- exposition by the teacher
- discussion between teacher and pupils and between pupils themselves
- appropriate practical work
- problem solving, including the application of science to everyday situations
- investigational work
- use of appropriate science resources
- direct teaching to individuals, groups of various sizes and whole class

As we understand that there are many different science abilities in each class, we ensure that each unit of work has sufficient differentiation to allow all children to work at their level of challenge. We may do this by:

- grouping children by ability and setting different tasks for each group
- grouping children in mixed ability groups where more able children can act as coaches/mentors
- providing a variety of resources/activities that are matched to the children's abilities.

## **Curriculum links in Science**

Chris Quigley milestone objectives are used to plan lessons, in order to ensure relevant skills are being taught at each phase and to ensure a broad and balanced, as well as challenging, curriculum.

Where possible, Science topics are planned to link with topics in other subject areas, e.g. in Maths (tables, charts and graphs, recording averages), Geography (water cycle, sustainable energy) or Music (sound) so that skills can be transferred in a range of subject areas. This also supports with deepening understanding and offers the opportunity for Science vocabulary to be used in a wider context.

### **Computing:**

It is our intention to use computing as a natural extension of, and support for, science in order to handle and manipulate the information gained during lessons appropriately.

### **Literacy:**

We are aware of the importance of literacy in Science and encourage the children to write using bullet points and diagrams as they would with explanation texts. They also use their literacy skills to make predictions and draw conclusions, carefully explaining their reasoning and using evidence. They will also develop their use of Tier 2 and 3 vocabulary, using age-appropriate scientific vocabulary within their writing. In addition, science-based texts are sometimes used in English lessons.

### **Mathematics:**

Mathematics and Science have some very close links and the teaching of many aspects of mathematics crosses with those of science. Measuring, data handling, weighing and capacity all fall into this category and staff are able to use these areas to re-inforce the children's knowledge.

### **History:**

Scientific discoveries and the contributions of individuals to Science will be studied across Key Stages 1 and 2.

## **Assessment**

The Subject Leader has the responsibility for monitoring the standards of children's work and the quality of teaching. This is done by close liaison with colleagues. Regular book scrutiny will take place to ensure that children are working at the correct level for their year group and ability, allowing the subject leader to ensure the coverage and achievement in accordance with National Curriculum expectations.

Years 2 and 6 are assessed using the Interim Framework, gaining either working towards the expected standard or working at the expected standard. Reporting to parents is done annually via their end of year written report.

## **Equal Opportunities**

We believe that a broad and balanced Science education is the entitlement of all children, regardless of ethnic origin, gender, class, aptitude or disability. Our full 'Equal Opportunities' and 'Inclusion' policies can be found in our policy file. We are aware of how important differentiation is in order to allow all children access to the curriculum. We take account of Education, Healthcare Plans (EHC's) for those children who have additional needs.

## **Health and Safety**

It is important that care should be taken at all times when carrying out investigations. The classroom should be well organised and children should be guided to work safely and sensitively (especially in the study of Life and Living Processes).

Pupils should be taught to use all equipment correctly and safely, with the teacher demonstrating safe use.

Pupils to be supervised at all times during practical work – where there is a higher risk e.g. using heat for melting, pupils to be supervised in small groups.

Safety goggles and protective clothing should be worn when appropriate.

Equipment and hazardous materials are to be stored safely and away from children - either in locked cupboards or in the Site Manager's room.

Scrupulous hygiene must be observed before and after cooking activities or handling animals, micro-organisms, etc. Younger pupils should be supervised to ensure that they wash their hands properly.